

### Patent Claims

1. Apparatus for determining and/or monitoring a process variable of a  
5 medium, comprising: An oscillatable unit (1) secured to a membrane (5); a  
sending/receiving unit (6), which excites the oscillatable unit (1) to oscillate and  
which receives oscillations of the oscillatable unit (1);  
wherein the sending/receiving unit (6) comprises a disk-shaped, piezoelectric  
element (15); and  
10 wherein the apparatus further comprises a control/evaluation unit (10), which,  
on the basis of the oscillations of the oscillatable unit (1), monitors and/or  
determines the process variable;  
characterized in that  
the disk-shaped, piezoelectric element (15) has at least two segments (18),  
15 which are essentially polarized oppositely to one another; and  
at least two electrodes (20) of opposite polarity are applied to the side (16) of  
the disk-shaped, piezoelectric element (15) facing away from the membrane (5).
2. Apparatus as claimed in claim 1,  
20 characterized in that  
exactly two electrodes (20) are applied to the side (16) of the disk-shaped,  
piezoelectric element (15) facing away from the membrane (5).
3. Apparatus as claimed in claim 1 or 2,  
25 characterized in that  
the electrodes (20) have essentially the same shape.
4. Apparatus as claimed in claim 3,  
characterized in that

the electrodes (20) have the shape of semicircular segments.

5. Apparatus as claimed in claim 1 or 2,  
characterized in that

5 the electrodes (20) are so structured and arranged that they annularly surround themselves.

6. Apparatus as claimed in claim 1 or 2,  
characterized in that

10 the piezoelectric element (15) is provided on the side (17) facing the membrane (5) at least partially with a conductive coating (25).

7. Apparatus as claimed in claim 1, 2 or 6,  
characterized in that

15 the side (17) facing the membrane (5) is connected electrically conductively with ground.